Guest editorial

Editorial for SFF Symposium Special Issue

It is exciting to be part of the additive manufacturing (AM) research community these days. With the upswing in activity and interest over the past five-seven years, AM has captured the attention of experts around the world who are making significant advances on multiple fronts. As early as 1995, a divergence of low-cost and high-performance 3D printers has been observed [NCMS Report 0199RE98, "The Road to Manufacturing: 1998 Industrial Roadmap for the Rapid Prototyping Industry", Rapid Prototyping Technology Advancement II Program sponsored by the Manufacturing Technology Directorate, Wright Laboratory (WL/MTX), Air Force Materiel Command, USAF, under Cooperative Agreement Number F33615-96-2-5619, June 30, 1998, Ann Arbor]. I personally wonder if the distance between the two approaches is shrinking. The quality of parts from low-end printers is increasing, perhaps most popularly evidenced by Stratasys' ULTEM[®] polymer for FDM[®]. With large multi-national companies such as Hewlett-Packard entering the market of equipment manufacturers, there is hope that high-end machine prices will come down or at least become more competitive than in the past. Feedstock cost in certain arenas is a significant part of a component cost. This is being attacked by new and established feedstock providers for AM. As is the case for any manufacturing industry, increased usage results in higher volumes of feedstock use, which justifies lower cost feedstock preparation methods, hopefully which realized in lower feedstock costs for the consumer.

This is a special issue devoted to Best Papers from the 26th International Annual Solid Freeform Fabrication Symposium -An Additive Manufacturing Conference. These papers were selected from 144 manuscripts submitted to the meeting. To view the full contents and to download gratis pdfs of articles from the conference, I refer you to the archive site, http:// sffsymposium.engr.utexas.edu/archive, where manuscripts from all SFF Symposia are available. The 2015 conference drew 388 attendees who presented 261 papers. I am also heartened to see the increase in the numbers of researchers moving into AM. In many cases, these are individuals who have established expertise in other areas and who are bringing that expertise to bear in new ways on ongoing research issues in AM. Several papers in this special issue reflect this. Overall, papers reflect the broad range of activity in AM research, covering in-situ measurements for enhancing part properties, bulk-to-thin-wall effects, characterization and improvement of metal part microstructure and properties, material jetting and inkjet printing and several novel applications of the technology: walking robots and extraterrestrial structures.

The 27th SFF Symposium is scheduled for August 8-10, 2016 in Austin, Texas. I hope you will be able to attend.

David Bourell

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